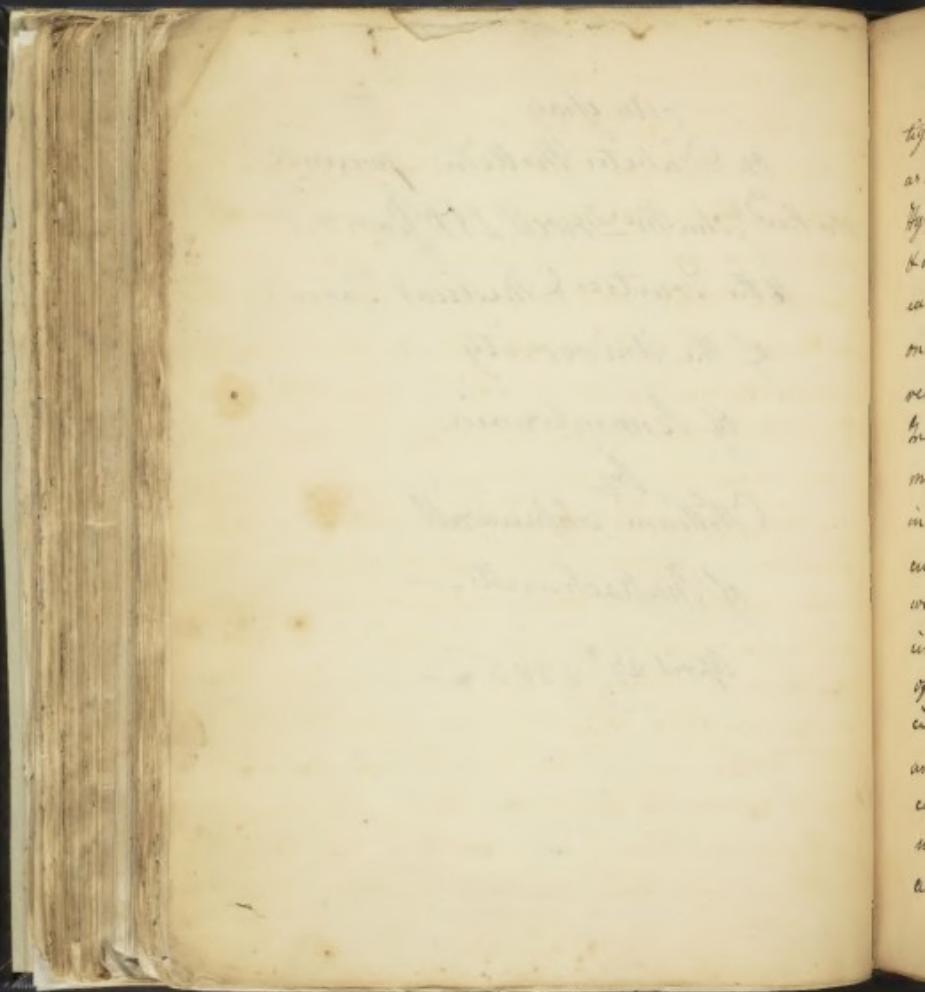


#8

An essay
on Diabetes Mellitus presented
to the Rev^d John McDowell LL D Provost
to the Trustees & Medical Faculty
& the University
of Pennsylvania
by
William Aspinwall
of Massachusetts.

April 27th 1808.



An attempt has been made in this epoch, to investigate, the cause, of Diabetes Mellitus, only. Other kinds as Diabetes Migratus, Diabetes Arthriticus, Diabetes Hystericus &c are considered merely as symptomatic & will terminate with the cure of the primary disease. The belief, that Diabetes Mellitus is dependent on & connected with, an affection of the liver, was received from the Lectures of the Professor of the Institutes & Practice of Medicine. This opinion was more confirmed, when it was found, that the lungs, in which, the chyle, after being taken into the circulation, is supposed to be changed into red blood, were always in a sound state, in diabetic patients. The kidney have been supposed to be the seat of Diabetes. Although they have exhibited a pale appearance, generally on dissection, yet this as Dr. Tullen says, is rather the effects, than the cause of morbid action in them. The facility with which, they have recovered their healthy action, when other symptoms have been over

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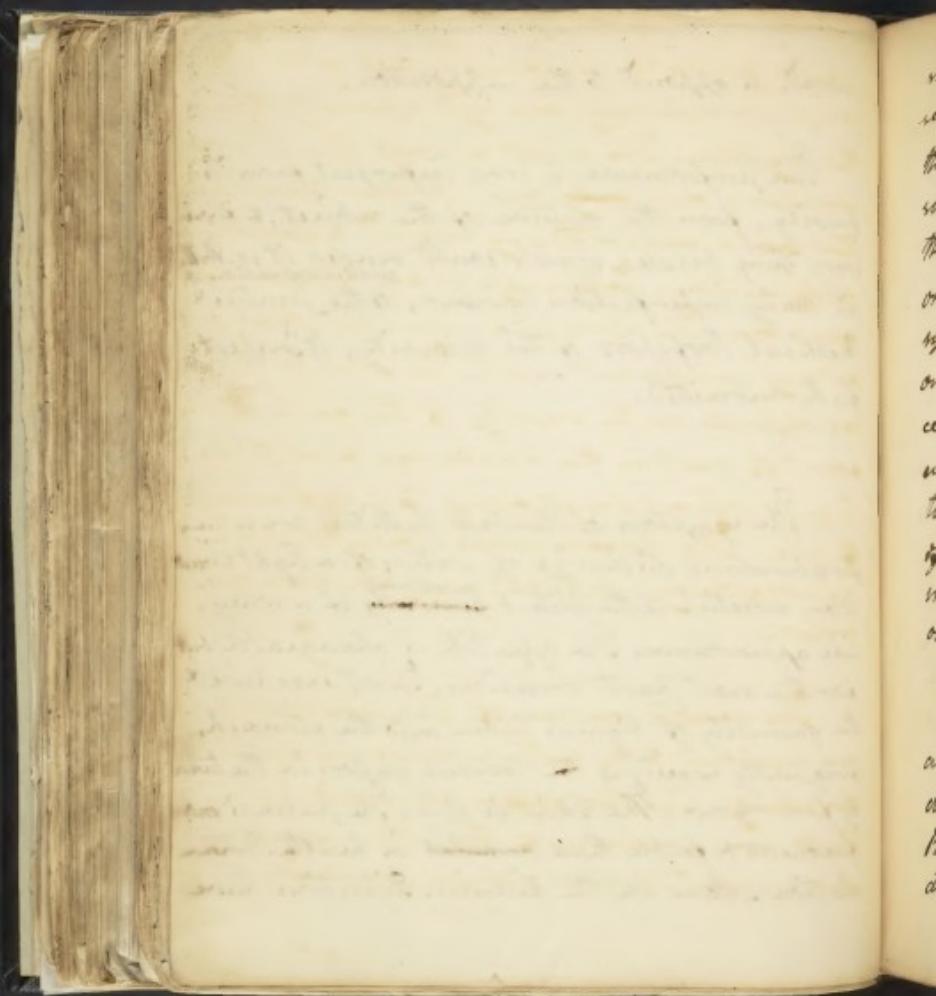
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moved, is opposed to the composition.

This performance is very imperfect from its brevity, from the nature of the subject, & from every thing besides which could render it so. With ^{and examination of} its many imperfections however, to the ^{most} learned & Medical Professors of this University, it is respectfully submitted.

The symptoms of Diabetes Mellitus, are a superabundant discharge of water, of a light straw color sweetish to the taste & ^{sometimes} of a whey-like appearance. The appetite is changeable, but for the most part voracious. Thirst excepted the quantity of liquids taken into the stomach, frequently exceeding the several gallons in the twenty four hours. The skin is dry. The pulse is more frequent & feeble than ~~on~~ ^{is} in health. Inagination. Pain in the kidneys. Digestions have



shew them to be in a flaccid state & the vessels preternaturally enlarged especially those of the cryptae. This is not always the case, for sometimes only ~~only~~ one, at other times neither have exhibited any morbid appearance or distinction. Costiveness is an attendant symptom. The stool of a greenish color, without any unpleasant smell. The color of the faeces depends on the acidity of the stomach. The want of smell in the discharge from the œcum, is without doubt, owing to a deficiency of bile. The disease comes slowly & almost imperceptibly, without any previous disorder.

The remote causes of Diabetes Mellitus are supposed to be intemperance in eating & drinking. The two cases described by Dr. Rollo are evidences of this. Other causes have been ascribed, as great fatigue, exposure to

for all is well here & we have
had some very fine weather but
I am still rather too quiet & don't know
how long I shall go on like this
but I am getting better & I hope to be
able to get back to work in a few days
but I am still not strong enough to do
any heavy work & I have to take care of
myself & my wife & my children & my
house & garden & house & garden & house
etc etc

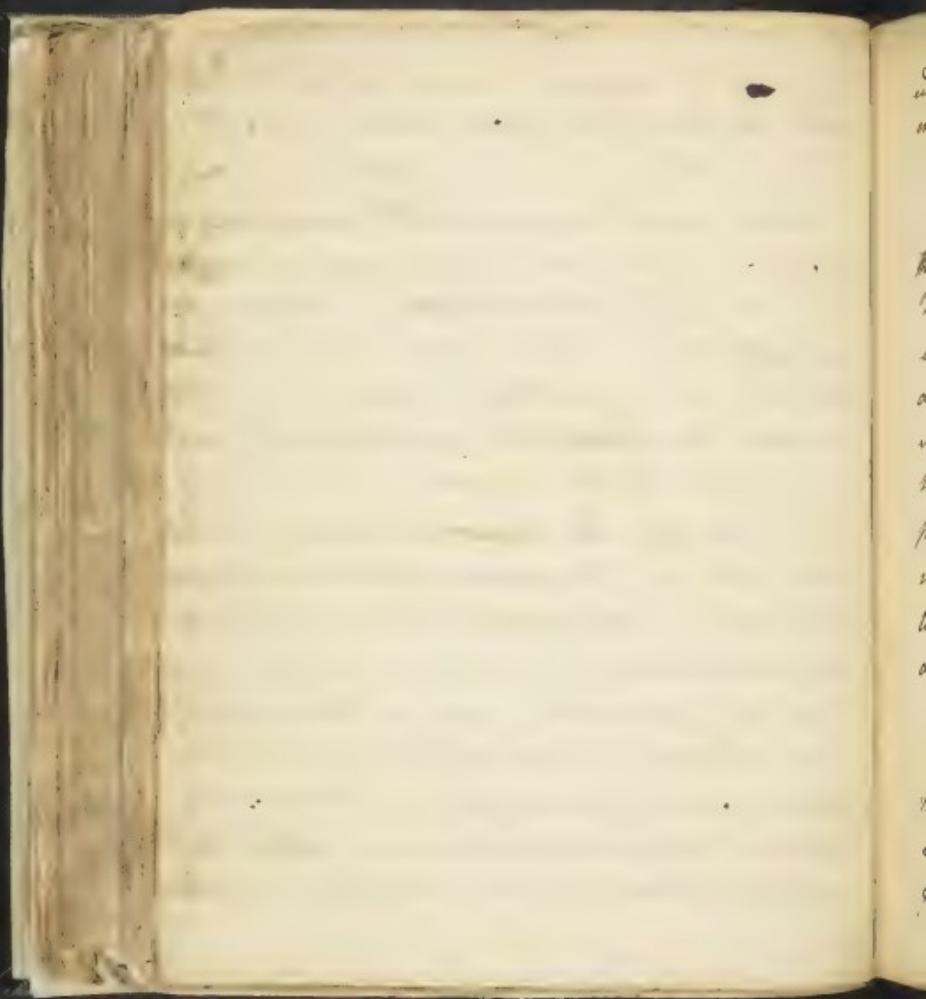
It is still a very small
place in comparison to a city but
I like living where we can go hunting
and fishing with our children & our dogs
in the evenings

heat & cold; acid drinks. The drinking of large quantities of mineral waters. Too frequent use of laudanum & other medicines. It has followed intermittent fevers. There may have been the remote causes of the other kinds of Diabetes; but of Diabetes Mellitus, other than intemperance in eating & drinking has ~~been~~ seldom been the cause.

The greatest difficulty, that has occurred to writers on this disease, has been to assign a proximate cause. Dr. Darwin's opinion was, that the chyle is carried immediately to the bladder without entering the circulation. In proof of this, he says, when a large quantity of spirituous is drunk, it is by the inverted motion of the urinary absorbents, which anastomose with the lacteals, of the intestines, conveyed into the bladder. By these being frequently inverted, the chyle by habit, ~~is~~ passes ~~into the~~ directly to the bladder. Experiments, that have been since made, disprove of this direct communication.

between the stomach & bladder. The blood also
which has been taken from diabetic patients
has had not only a wheyish & sweetish, but on
standing several days, exhibited a caseous ap-
pearance. This proves, that the chyle is, as usual
taken up by the kidneys, & there is no reason for
~~supposing~~ their motions inverted. It is a well known
fact, that, not only, putting the hands into water;
but even the sight of it, will frequently excite
a desire to empty the bladder.

Dr Cullen says, the proximate cause of this dis-
ease being so little known or ascertained, I can-
not propose any rational method of cure. The proxi-
mate cause however he supposes to consist in some
fault of the assimilatory powers or those employed
in converting alimentary matter, into the proper
animal fluids. He has given no cause for this
defect in the assimilatory organs; or pointed out
any of the viscera, as being particularly disturb-



wed in ~~their~~ healthy functions. Dr. Dobson & Dr. Wells
entertain the same opinion almost with Pullen.

The proximate cause of Diabetes Mellitus, is, in
this day supposed to be, an affection of Liver.
This consists in a suspension of its secretory pow-
ers; whether arising from torpor, paralysis or
any other cause. Although dissections have not
shewn the liver, ^{to be} particularly affected; yet
how seldom is it, that there is any morbid ap-
pearance after death, ~~in~~ ⁱⁿ most diseases. Nor
in Diabetes is it necessary. Will a paralytic
limb after death, differ in appearance from
a healthy one?

This opinion, of the proximate cause of Diabetes
Mellitus, as has been acknowledged, was suggest-
ed by Dr. Rush. When speaking of the liver & its
functions, he says, "that it is designed to receive

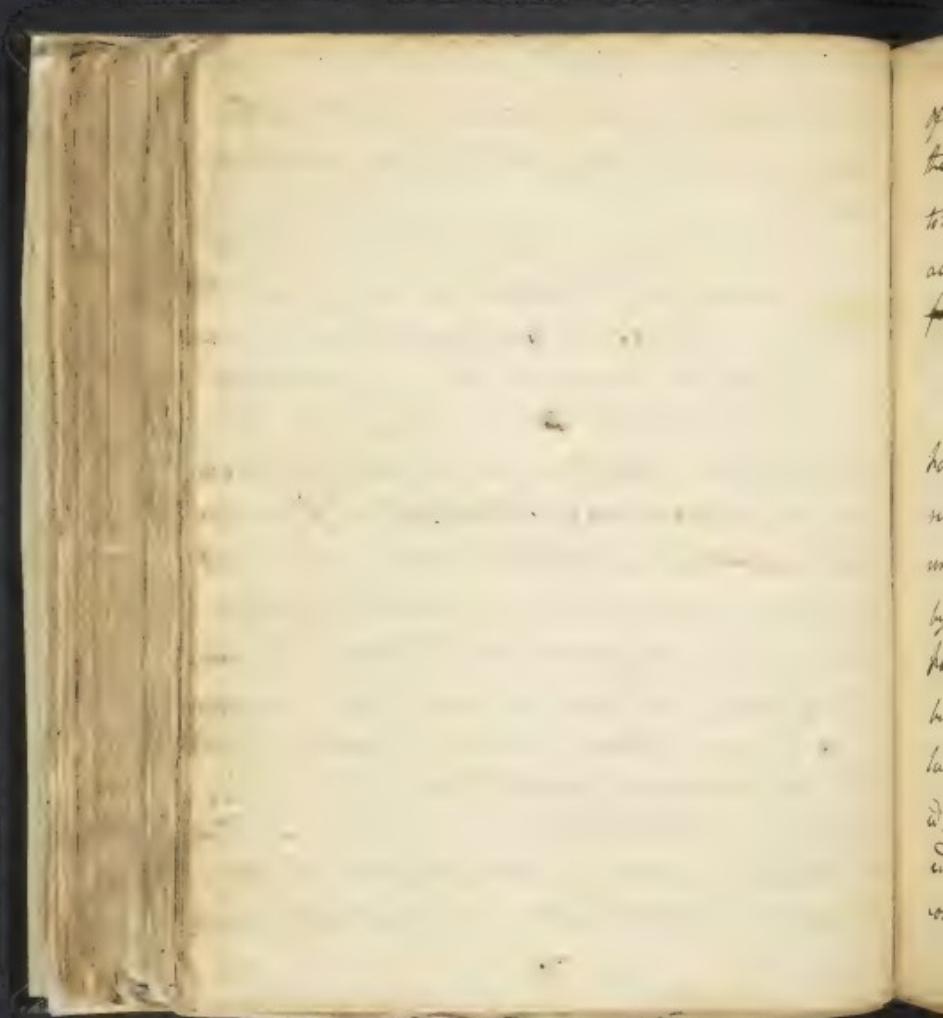
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blood from every part of the body, in order, to subject that part of it, which had not been completely animalized or diverted of its sluggish properties, to a secretory process & afterwards to pour out the product of this secretion, mingled with the liquor of the pancreas, into the duodenum, to be absorbed or otherwise taken up by the lacteals & conveyed with the chyle, from the stomach into the blood vessels, in order to be completely converted into red blood, for the purpose of serving the various & important uses, for which that fluid is intended in the human body." The product of this secretion is what the Professor calls hepatic bile. It is says D^r Boerhaave "mild sweetish & watery" to the taste. It becomes bitter only by stagnation in the Gall Bladder. Does not a defect, in the functions of the liver, and infarctory account for the want of a proper assimilation of alimentary into the animal

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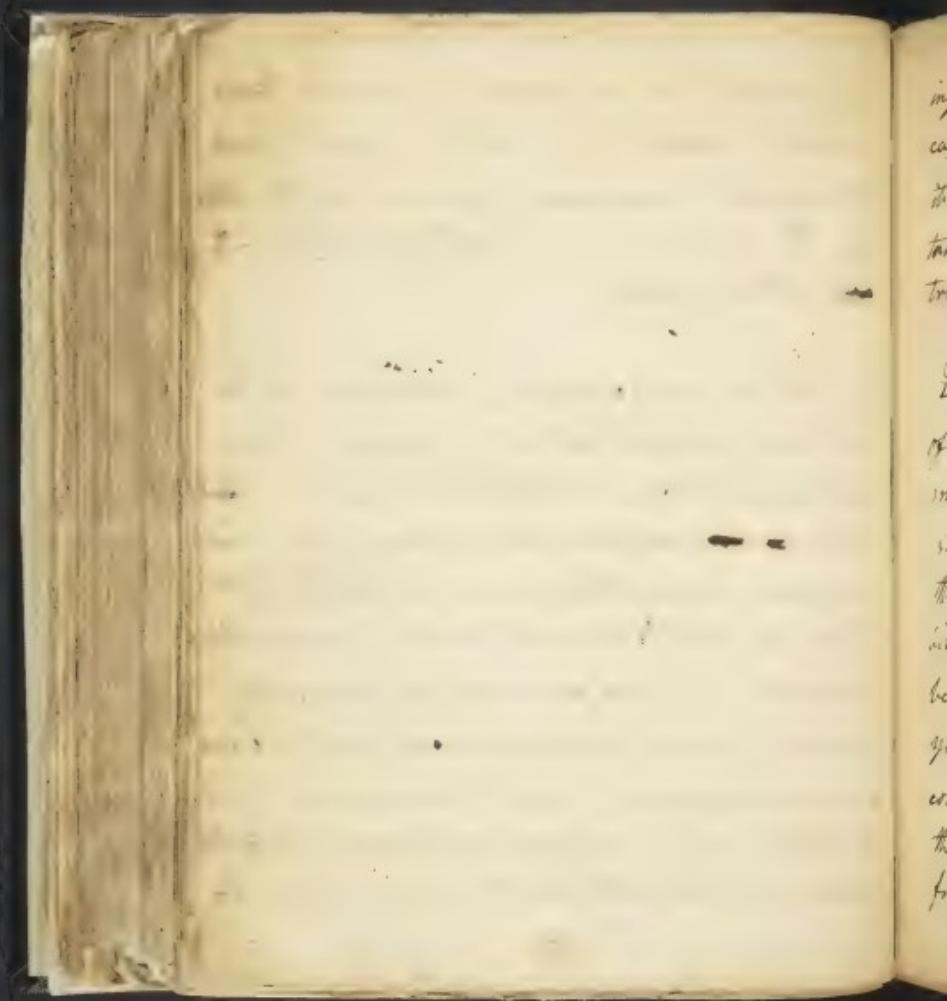
fluids spoken of by Dr. Cullen. That the ^{urine} in the
virus principally at fault in Diabetes Mellitus is
inferr'd.

That it occurs in persons intemperate in
eating & drinking. The obstructions enlargement
of the liver, the effects of intemperance in drink-
ing, are too well known to need any comment.
In intemperate eaters ~~it~~ occurs frequently. In
such cases, the digestive power of the stomach
are overproportioned to those of the ^{liver}. For diges-
tion cannot be supposed to be completed, until
the chyle is so changed, as to become a proper
fluid for the nourishment of the body. The quan-
tity of chyle, must be in proportion to the quan-
tity of aliment taken into the stomach, in order
that it be properly digested there. The spices
which are added to give a zest to the food of
all Epicures, not only promotes the flow of
the Gastric liquor, but also stimulates the mouth.



of the lacteals to an increased absorption. Hence the liver is excited to a secretion proportionate to the quantity of aliment, received into the stomach. Hence also the increased quantity of bile ~~for~~ in the system.

Altho the liver frequently complains of the hard task imposed on her, by bilious colics, sick headaches &c, she still continues her efforts until, ~~to~~ ^{unable} to relieve herself, she sinks by degrees, under the oppressive burden, torpid & inactive. If the stomach do not sympathize but continues to call for more aliment & the lacteals to absorb the chyle, as fast as it is formed, the blood vessels at length become overcharged with chyle. The chyle, from its quantity becomes a stimulus to the heart & arteries, excite-



ing morbid action in them. As the liver is incapable of performing its duty by changing it into bile; the kidneys to relieve the system take on increased action, which constitutes true Diabetes Mellitus.

I infer that the

D^r Rolle ^{in this Disease} says the liver is affected from the deficiency of bile, also from the consterness & want of smell in the stools. Though D^r Rolle believed the stomach to be the seat of the disease, he says, there is "reason to suppose a deficiency of bile from whatever cause it may proceed; for beside the light color of the stools, there is no yellowness of the eyes, or even that high saffron color of the urine, which takes place, when the bile is sufficiently excreted, but prevented from passing into the intestines" —

From what has been said, as to the proximate cause of Diabetes,^{the cure} will readily be inferred. It must consist, in obviating the saccharine process, diminishing the morbid action of the stomach & in restoring the liver to its ^{healthy} action.

